Amendments to the Claims:

The following listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently amended) A process for ~~, comprising:~~ removing water and sulfur compounds from a hydrocarbon stream containing ~~, comprising~~ water and sulfur compounds selected from the group consisting of hydrocarbon sulfide, carbonyl sulfides, mercaptans, especially C_1-C_6 mercaptans, organic sulfides, especially di-C_1-C_4-alkyl sulphides, organic sulfides, especially di-C_1-C_4-alkyl disulfides, thiophene compounds, aromatic mercaptans, especially phenyl mercaptan, and mixtures thereof, wherein the total amount of said sulfur compounds contained in the hydrocarbon stream is up to 3 vol%, based on total hydrocarbon stream, by adsorbing at least 60 wt% of the water contained in said hydrocarbon stream therefrom onto a first zeolite having a pore diameter of less than 5 Å; and thereafter, contacting said hydrocarbon stream with an adsorbent comprising a second zeolite having a pore diameter of at least 5 Å to adsorb the sulfur compounds thereon to thereby provide a loaded adsorbent, followed by a regeneration of said loaded adsorbent in the presence of water by contacting said loaded adsorbent with a regeneration gas stream ~~having a relative humidity of at most 30% and~~ comprising an inert gas or an inert gas mixture having a relative humidity of between 5% and 60 %, said regeneration being conducted at a temperature of between 200 and 400 °C and a pressure between 30 and 120 bara, whereby an absorbent having significantly reduced degradation/ageing is obtained.

Claims 2 – 4 (Canceled)

5. (Currently amended) A process according to claim 1, in which the hydrocarbon stream is a gaseous stream and also comprises hydrogen sulfide and optionally carbon dioxide and up to 2 vol% hydrogen sulfide, with the hydrogen sulfide and part of the carbon dioxide being removed by means of washing the hydrocarbon stream with a chemical solvent.

6. (Previously presented) A process according to claim 5, in which the temperature of the zeolite adsorption process is between 10 and 60 °C, the pressure is between 10 and 150 bara, and the superficial gas velocity is between 0.03 and 0.6 m/s.

7. (Currently amended) A process for the regeneration of an adsorbent, wherein said process comprises:
providing one or more vessels having a first adsorbent bed comprising a first zeolite having a pore diameter of 5 Å or less and a second adsorbent bed comprising a second zeolite having a pore diameter of more than 5 Å;
using said one or more vessels in the removal of sulfur compounds from a hydrocarbon stream to provide said second zeolite that is loaded with sulfur compounds; and
regenerating said second zeolite that is loaded with sulfur compounds by contacting the adsorbent with a regeneration gas stream having a relative water humidity ~~less than 100%~~ of between 5% and 60 % at a temperature of between 200 and 400 °C and a pressure between 30 and 120 bara, whereby a second zeolite having a significantly reduced degradation/ageing is obtained.

Claim 9 (Canceled)

8. (Currently amended) A process according to claim 7, in which the adsorbent in said second adsorbent bed comprises zeolite dispersed in a binder and the relative water humidity of said regeneration gas stream is between 10% and 30 %.

10. (Currently amended) A process according to claim 7, in which the regeneration is carried out at a pressure between 50 [[1]] and 90 [[150]] bara, a temperature between 230 [[200]] and 350 [[400]] °C, and a superficial gas velocity of less than 0.20 m/s.

11. (Previously presented) A process according to claim 10, in which the regeneration gas stream is a gas stream obtained by saturating the stream at a temperature below the regeneration temperature.

12. (Currently amended) A process according claim 11, in which the regeneration gas stream has a relative humidity between 10 [[0.1]] and 30%.

Claim 13 (Canceled)

14. (Currently amended) A process for the removal of sulfur compounds from a hydrocarbon stream, wherein said hydrocarbon stream is a gaseous stream and contains a sulfur compound selected from the group consisting of hydrogen sulfide, carbonyl sulfide, mercaptans, organic sulfides, organic disulfides, thiophene compounds, aromatic mercaptans and mixtures thereof, said process comprises:

treating said hydrocarbon stream to remove water therefrom followed by contacting said hydrocarbon stream with an adsorbent comprising a zeolite having a pore diameter of at least 5 Å to absorb said sulfur compound thereon to thereby provide a sulfur loaded adsorbent; and contacting said sulfur loaded adsorbent with a regeneration gas stream having a relative humidity between 10 and ~~of at most~~ 30%, wherein the regeneration gas comprises an inert gas, whereby a regenerated adsorbent is obtained having significantly reduced degradation/ageing is obtained.

Claim 15 (Canceled)

16. (Previously presented) A process according to claim 14, wherein said mercaptans include C_1-C_6 mercaptans, said organic sulfides include di-C_1-C_4-alkyl sulfides, organic disulfides include di-C_1-C_4-alkyl disulfides, said aromatic mercaptans include phenyl mercaptan, and the total amount of said sulfur compounds contained in said hydrocarbon stream is up to 3 vol% based on total gas stream.

Claim 17 (Canceled)

18. (Previously presented) A process according to claim 16, in which said hydrocarbon stream prior to contacting with said adsorbent, comprises hydrogen sulfide in the range up to 2 vol% hydrogen sulfide, and a part thereof is removed by means of washing with a chemical solvent.

19. (Previously presented) A process according to claim 18, in which the temperature of the step of contacting said hydrocarbon stream with said adsorbent is between 10 and 60 °c, the pressure is between 10 and 150 bara, and the superficial gas velocity is between 0.03 and 0.6 m/s.

20. (Currently amended) A process for the regeneration of an adsorbent, which is loaded with a sulfur compound, by contacting the adsorbent with a regeneration gas stream having a relative water humidity of between 5 and 60% at a temperature of between 200 and 400 °C and a pressure between 30 and 120 bara ~~at least 0.1% and less than 100%~~, wherein said adsorbent is contained in at least two beds, with one bed comprising a first zeolite having a pore diameter of up to 5 Å, and with a second bed comprising a second zeolite having a pore diameter of more than 5 Å, whereby said regenerated absorbent has significantly reduced degradation/ageing .

21. (Previously presented) A process according to claim 20, wherein said adsorbent of said second bed further comprises said second zeolite dispersed in a binder.

Claim 22 (Canceled)

23. (Currently amended) A process according to claim 21, in which the contacting step is carried out at a pressure between 50 [[1]] and 90 [[150]] bara, a temperature between 230 [[200]] and 350 [[400]] °C and a superficial gas velocity of less than 0.20 m/s.

24. (Previously presented) A process according to claim 23, in which said regeneration gas stream is a gas stream obtained by saturating the stream at a temperature below the regeneration temperature.

25. (Currently amended) A process according to claim 24, in which said regeneration gas stream has a relative humidity between 10 [[0.1]] and 30%.